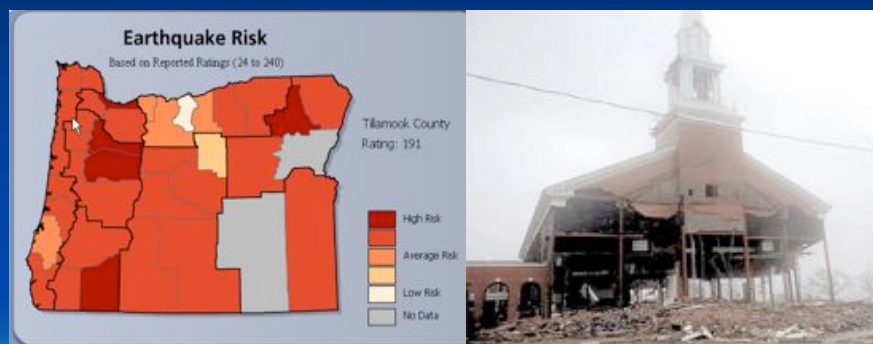


Earthquake & Tsunami Preparedness For Local Government

By Thomas E. Manning CEM, OCEMS

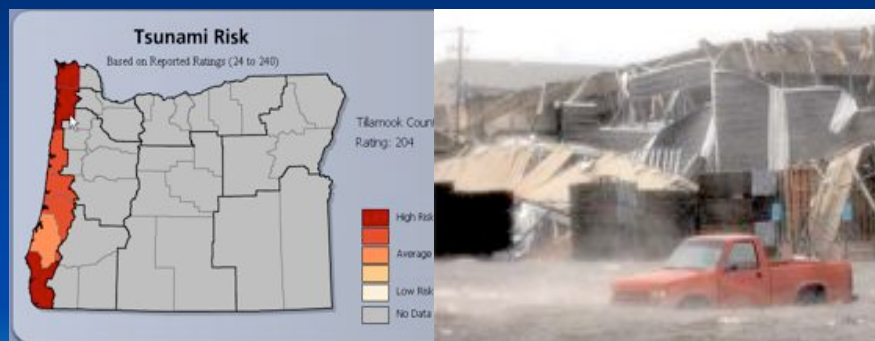
5/20/07

Earthquake Hazard Risk Map



5/20/07

Tsunami Hazard Risk Map



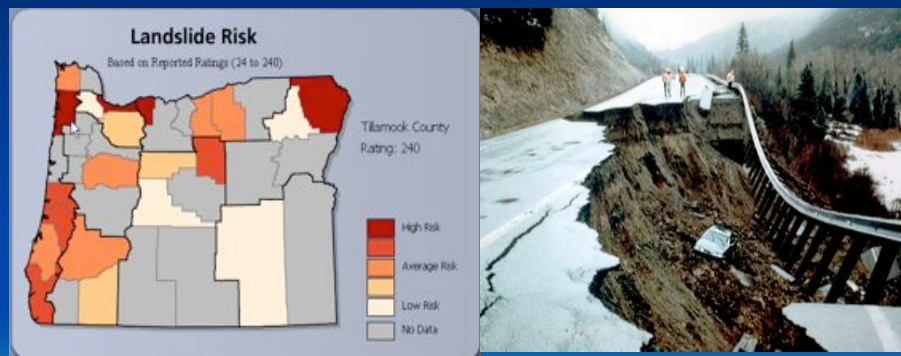
5/20/07

Earthquake & Tsunami Secondary Hazards

- Tillamook County Associated Hazards

5/20/07

Landslide Risk Map

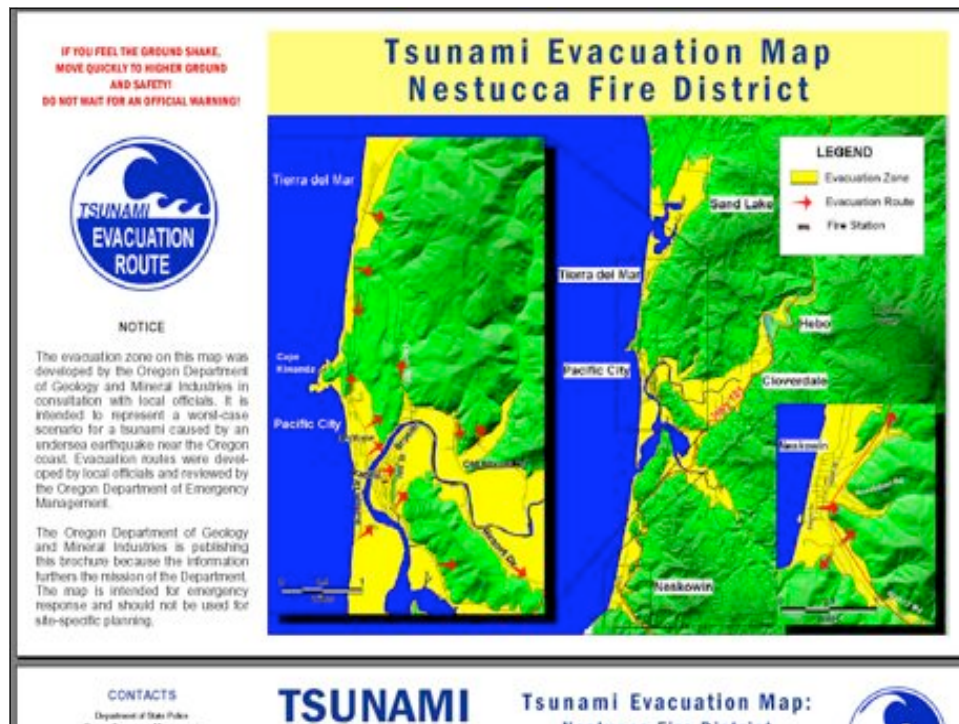


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Resource Shortages



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Tsunami Inundation Neskowin



5/20/07

Tsunami Inundation Rockaway Beach



5/20/07

Depoe Bay





Tangled debris is all that remains of the 200-foot-long Elk Creek Bridge, which stood at Cannon Beach, Oregon, before being destroyed by a tsunami generated by the disastrous Alaskan earthquake of March 27, 1964. Photo courtesy of The Oregonian.

Seaside, 1964



Tillamook County Tsunami Warning System



5/20/07

Tsunami Warning Notification

- National Alert & Warning System
- Oregon Emergency Response System
- Law Enforcement Data System
- NOAA Alert Radio System S.A.M.E.
- Emergency Alert System
- US Coast Guard Maritime Warning System
- RACES/ARES
- Alaska Tsunami Warning Center Buoy System NOAA
- Warning Sirens
- ODOT AM Radio Emergency Road Info 1650 AM

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9-1-1 Activation of Radio Controlled Sirens

- Neahkahnie
- Manzanita
- Nedonna Beach
- Rockaway Beach
- Twin Rocks
- Cape Meres
- Oceanside
- Netarts
- Tierra del Mar
- Cape Kiwanda
- Pacific City
- Neskowin
- Nehalem
- Wheeler
- Garibaldi
- Bay City
- Nehalem State Park
- Cape Look Out State Park
- Sandlake Recreation Area USFS

5/20/07

Emergency and Public Service Communications

- **FCC declarations of an emergency**
 - The **information included** in an **FCC declaration** of a temporary state of communication emergency is any **special conditions** and rules **to be observed** during the emergency.



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Emergency and Public Service Communications

- **Tillamook County RACES /ARES**
 - Radio Amateur Civil Emergency Service
 - Provides emergency Communications when all else fails.



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Tillamook County Emergency Services

- RACES/ARES Amateur Radio Operators
- CERT Community Emergency Response Teams
- VOAD Volunteer Organizations Active in Disasters
 - Red Cross
 - Salvation Army
 - Faith Based Organizations
 - Boy Scouts of America / Girl Scouts of America
 - School Districts
 - Special Districts
 - Critical Incident Stress Debriefing Teams
 - Local and Visiting Volunteers

5/20/07

The Dec. 26th M9.3 Sumatra Earthquake

Scientists calculated the "mean North pole" was shifted by about 2.5 centimeters (1 inch) in the direction of 145 degrees East Longitude. This shift east is continuing a long-term seismic trend identified in previous studies.

They also found the earthquake decreased the length of day by 2.68 microseconds.

The quake also affected the Earth's shape, flattening it on the top and bulging at the equator, continuing the trend of earthquakes making Earth less oblate.

CASCADIA SUBDUCTION ZONE EARTHQUAKES

- **Can last 3-5 minutes**
- **Parts of the coast will rise or fall 10+ feet**
- **A tsunami 30-50+ feet high will strike the coast minutes after the earthquake**
- **Tsunamis will travel across the Pacific at 500 mph, striking Hawaii, Alaska, Japan and other countries**

The chances of :

Winning the Powerball Lottery - 1 in 140,089,128

Being hit by lightning - 1 in 2,800,000

A Cascadia Subduction Zone Earthquake
in the next 50 years - 1 in 6. . .

An earthquake occurring in the Pacific Northwest
in the next few days - 100%

Are We prepared?



Cascadia
A quarterly publication of the Oregon Department of Geology & Mineral Industries

What can you do to prepare your community?
Oregon at risk

www.OregonGeology.com

The Oregon Department of Geology and Mineral Industries

Earthquakes and other natural hazards in the Pacific Northwest

Contact us # Site map # Links # Search

- Earthquakes
- Landslides and debris flows
- Volcanic eruptions
- Geologic Hazards on the Oregon coast
- Through the eyes of the state geologist
- Resources for risk reduction and mitigation for earthquakes

Earthquake hazards in the Pacific Northwest

Earthquake information from the Pacific Northwest Seismograph Network (PNSN)

- Recent earthquakes in the Pacific Northwest
- Most recent notable earthquake
- Notable Pacific Northwest earthquakes since 1993

The latest earthquake news worldwide

New information on Cascade earthquakes

Learn more about the magnitude 7.9 Denali Fault Earthquake that occurred November 3rd, 2002 in Alaska

Oregon seismicity in 2001

Summary of Special Paper 29, preliminary estimates of future earthquake losses in Oregon (3-2-86, 110-86)

Earthquakes from three different sources threaten communities in Oregon and the Pacific Northwest. These sources are strike, subduction zone and intraplate earthquakes. The most common are strike earthquakes, which typically occur along faults or breaks in the earth's crust at shallow depths of 0-12 miles (0-20 km) below the surface. The two largest earthquakes in recent years in Oregon, Beardslee, magnitude 5.0 and the Klamath Falls, main shock magnitude 5.9 and magnitude 6.0 of 1982, were strike earthquakes.

The Oregon State Capitol was severely damaged in the magnitude 5.6 Scottsbluff earthquake in 1993.

Oregon Department of Geology & Mineral Industries
&
Tillamook County Department of Emergency Management

Tillamook Emergency Management
www.co.tillamook.or.us

neic.usgs.gov
Current world seismicity, earthquake hazards program

www.fema.gov/mit/how2.htm
Mitigation and preparation for disasters

